

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claims 1-63 (Cancelled)

Claim 64 (currently amended): A medical device comprising

~~a substrate constructed and arranged for insertion into a patient and having at least one lumen, said lumen having a surface,~~

~~wherein the substrate is an~~ a non-layered insertable medical instrument formed from polymers or copolymers selected from the group consisting of polyurethane and silicon, and having at least one lumen and a surface; and

a plurality of monomer molecules directly graft polymerized on [a] said surface ~~of the substrate~~, forming a coating thereon, wherein said coating ~~on said substrate~~ is a polymer or copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from the group consisting of an acrylamide, N,N-dimethylacrylamide, and mixtures thereof.

Claim 65 (currently amended): The medical device of claim 64, wherein the instrument ~~substrate~~ is a catheter, guide wire or tubing.

Claim 66 (previously presented): The medical device of claim 64, wherein the catheter is selected from the group consisting of PTCA catheters, cardiology catheters, central venous catheters, urinary catheters, drain catheters, and dialysis catheters.

Claim 67 (previously presented): The medical device of claim 98, which further includes an additional polymeric layer.

Claim 68 (previously presented): The medical device of claim 64, wherein the coating provides a property of absorbing large quantities of water to provide moisture absorption or of lubricity.

Claim 69 (previously presented): The medical device of claim 98, wherein the functional groups attach physiologically or pharmacologically active agents.

Claim 70 (previously presented): The medical device of claim 98, wherein the coating provides a drug depot permitting the delivery of drugs from the coating.

Claim 71 (currently amended): The medical device of claim 64, wherein the instrument substrate is a silicon polymer.

Claim 72 (currently amended): The medical device of claim 64, wherein the instrument substrate is polyurethane.

Claim 73 (previously presented): The medical device of claim 64, wherein the entire surface of the interior luminal surface, the exterior surface or both, is coated.

Claims 74-75 (canceled)

Claim 76 (currently amended): A medical device comprising
~~a substrate constructed and arranged for insertion into a patient and having at least one lumen, said lumen having a surface,~~

~~wherein the substrate is an~~ a non-layered insertable medical instrument formed from polymers or copolymers selected from the group consisting of polyurethanes, silicones, and latex, and having at least one lumen and a surface; and

a plurality of monomer molecules directly graft polymerized on [the] said surface ~~of the substrate,~~ forming a coating thereon, wherein said coating ~~on said substrate~~ is a polymer or

copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from the group consisting of an acrylamide, N,N-dimethylacrylamide, polyethyleneglycolacrylate, alkylacrylate, maleic acid, hydroxyethyl methacrylate, polyvinylpyridine, 2- and 4-vinylpyridine; 4- and 2-methyl-5-vinylpyridine; N-methyl-4-vinylpiperidine, and admixtures thereof.

Claim 77 (currently amended): The medical device of claim 76, wherein the instrument substrate is a catheter, guide wire or tubing.

Claim 78 (previously presented): The medical device of claim 77, wherein the catheter is selected from the group consisting of PTCA catheters, cardiology catheters, central venous catheters, urinary catheters, drain catheters, and dialysis catheters.

Claim 79 (previously presented): The medical device of claim 99, which further includes an additional polymeric layer on the coating.

Claim 80 (previously presented): The medical device of claim 76, wherein the coating provides a property of absorbing large quantities of water to provide moisture absorption or of lubricity.

Claim 81 (previously presented): The medical device of claim 99, wherein the functional groups attach physiologically or pharmacologically active agents.

Claim 82 (previously presented): The medical device of claim 99, wherein the coating provides a drug depot permitting the delivery of drugs from the coating.

Claim 83 (previously presented): The medical device of claim 76, wherein the monomer or derivative thereof is selected from the group consisting of an acrylamide, N,N-dimethylacrylamide, polyethyleneglycolacrylate, alkylacrylate, and hydroxyethyl methacrylate.

Claim 84 (previously presented): The medical device of claim 76, wherein the entire surface of the interior luminal surface, the exterior surface or both, is coated.

Claims 85-86 (canceled).

Claim 87 (currently amended): A medical device comprising

~~a substrate constructed and arranged for insertion into a patient and having at least one lumen, said lumen having a surface,~~

~~wherein the substrate is an~~ a non-layered insertable medical instrument formed from polymers or copolymers selected from the group consisting of polyurethanes, silicon polymers, polyvinylchloride and latex, and having at least one lumen and a surface; and

a plurality of monomer molecules directly graft polymerized on ~~[the] said surface of the substrate,~~ forming a coating thereon, wherein said coating ~~on said substrate~~ is a polymer or copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from the group consisting of an acrylamide, N,N-dimethylacrylamide, polyethyleneglycolacrylate, alkylacrylate, hydroxyethyl methacrylate, and admixtures thereof.

Claim 88 (currently amended): The medical device of claim 87, wherein the instrument ~~substrate~~ is a catheter, guide wire or tubing.

Claim 89 (previously presented): The medical device of claim 87, wherein the catheter is selected from the group consisting of PTCA catheters, cardiology catheters, central venous catheters, urinary catheters, drain catheters, and dialysis catheters.

Claim 90 (previously presented): The medical device of claim 100, which further includes an additional polymeric layer on the coating.

Claim 91 (previously presented): The medical device of claim 90, wherein the polymeric layer comprises a polymer selected from the group consisting of polyurethanes, acrylics, polyamides and cellulose.

Claim 92 (previously presented): The medical device of claim 87, wherein the coating provides a property of absorbing large quantities of water to provide moisture absorption or of lubricity.

Claim 93 (previously presented): The medical device of claim 100, which further includes physiologically or pharmacologically active agents and wherein the functional groups attach said physiologically or pharmacologically active agents.

Claim 94 (previously presented): The medical device of claim 87, wherein the lumen has both interior and exterior surfaces, and at least a portion of both the interior and exterior of the lumen is coated with monomer molecules graft polymerized to said surfaces.

Claim 95 (previously presented): The medical device of claim 87, wherein the entire surface of the interior luminal surface, the exterior surface or both, is coated.

Claim 96-97 (canceled).

Claim 98 (previously presented): The medical device of claim 64, further comprising at least one cross-linking agent or at least one monomer substituted with functional groups.

Claim 99 (previously presented): The medical device of claim 76, further comprising at least one cross-linking agent or at least one monomer substituted with functional groups.

Claim 100 (previously presented): The medical device of claim 87, further comprising at least one cross-linking agent or at least one monomer substituted with functional groups.

Claim 101 (previously presented): The medical device of claim 99, wherein the crossing-linking agent provides a cross-linked polymer structure.

Claim 102 (previously presented): The medical device of claim 99, wherein the crossing-linking agent comprises monomers having di- or multi-unsaturated functional groups.

Claim 103 (previously presented): The medical device of claim 99, wherein the crossing-linking agent is selected from the group consisting of diacrylates and dimethylacrylates of polyethylene glycol and diacrylates and dimethylacrylates of polypropylene glycol, trimethylolpropane triacrylate and trimethacrylate, di-trimethylolpropane, tetraacrylate, pentaerythritol tetraacrylate, and tetramethacrylate, divinylbenzene, divinyl sulfone silicone-containing diacrylates and dimethacrylates.

Claim 104 (previously presented): The medical device of claim 99, wherein the monomers substituted with functional groups is selected from the group consisting of carboxylic acid, amine and hydroxyl.

Claim 105 (previously presented): The medical device of claim 99, further comprising polyethylene glycol.

Claim 106 (previously presented): The medical device of claim 99, further comprising an active agent or drug.

Claim 107 (previously presented): The medical device of claim 106, wherein the drug is selected from the group consisting of anti-infective agents, antibiotics, antimicrobial agents, antithrombogenic compounds, anticancer agents, anti-inflammatories and mixtures thereof.

Claim 108 (currently amended): The medical device of claim 106, wherein the drug is selected from the group consisting of aminoglycosides, gentimicin, amikacin, benzalkonium

chloride, 2-bromo-2-nitropropane-1,3-diol, polyhexanide, benzalkoniumheparinate, tridodecylmethylammonium heparinate, [~~paclitaxel~~] and merbarone [~~;-methotraxate and dexamethasone~~].

Claim 109 (currently amended): The medical device of claim 106, wherein the drug is selected from the group consisting of rifamycin, gentamicin lauryl sulfate, vantocil, benzalkonium chloride, 2-bromo-2- nitropropane-1,3-diol, silver nitrate, and Germall plus [~~;-methotraxate and paclitaxel~~].

Claim 110 (new): The medical device of claim 106, wherein the drug is selected from the group consisting of paclitaxel, methotraxate and dexamethasone.

Claim 111 (new): A medical device comprising
an insertable medical instrument consisting essentially of polyurethanes, silicon polymers, polyvinylchloride or latex, and having at least one lumen and a surface; and

a plurality of monomer molecules directly graft polymerized on said surface, forming a coating thereon, wherein said coating on said surface is a polymer or copolymer or a derivative of said polymer or copolymer formed from a monomer or derivative thereof selected from the group consisting of an acrylamide, N,N-dimethylacrylamide, polyethyleneglycolacrylate, alkylacrylate, maleic acid, hydroxyethyl methacrylate, polyvinylpyridine, 2- and 4-vinylpyridine; 4- and 2-methyl-5-vinylpyridine; N-methyl-4-vinylpiperidine, and admixtures thereof.